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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,002	09/30/2003	Won Hee Lee	P24370	2803
7055	7590	06/18/2004	EXAMINER	
GREENBLUM & BERNSTEIN, P.L.C. 1950 ROLAND CLARKE PLACE RESTON, VA 20191			NORMAN, MARC E	
			ART UNIT	PAPER NUMBER

3744

DATE MAILED: 06/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/674,002

Applicant(s)

LEE ET AL.

Examiner

Marc E. Norman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8-11 is/are allowed.
- 6) ☒ Claim(s) 1,2,5-7,11,12 and 16 is/are rejected.
- 7) ☒ Claim(s) 3,4,13-15 and 17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 2, 5-7, 11, 12, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alsenz in view of Leimbach et al.

As per claim 1, Alsenz teaches an air conditioner comprising a plurality of compressors (12, 14, 16, etc), one of which is variable capacity (column 1, lines 58-66), inlet and outlet pipes (Figure 1), a condenser 25, an expansion valve 30, and microcomputer 10 controlling expansion valve 30 (via control signal 33). Alsenz does not teach controller 10 controlling the expansion valve to be opened by a designated degree to achieve rapid compressor pressure equilibrium when a compressor is stopped and then restarted. Leimbach et al. teaches control of an air conditioning expansion valve wherein the valve is opened when the compressor is stopped

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(column 2, lines 5-6) so that pressure equilibrium is rapidly achieved (column 1, lines 13-19). It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the pressure equalization expansion valve control of Leimbach et al. to the system of Alsenz for the purpose reducing the torque on the compressors when they are restarted (Leimbach et al., column 1, lines 19-25), and further since the basic concept applies equally to a system that comprises only one or a plurality of compressors.

As per claim 2, Leimbach et al. further teaches the system being applied such that the pressures on the suction and discharge sides of the compressor are equalized (column 1, lines 17-19).

As per claim 5, Leimbach et al. further teaches closing the port when pressure equilibrium is achieved (column 2, lines 17-20).

As per claim 6, see discussions of claims 1 and 2, above.

As per claim 7, see discussion of similar claim 5, above.

As per claim 11, Alsenz teaches stopping one or more compressors in accordance with a decrease in load. Again, Alsenz does not teach controlling the expansion valve to be opened by a designated degree to achieve rapid compressor pressure equilibrium when a compressor is stopped. Again, Leimbach et al. teaches control of an air conditioning expansion valve wherein the valve is opened when the compressor is stopped (column 2, lines 5-6) so that pressure equilibrium is rapidly achieved (column 1, lines 13-19). It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the pressure equalization expansion valve control of Leimbach et al. to the system of Alsenz for the purpose reducing the torque on the compressors when they are restarted (Leimbach et al., column 1, lines 19-25), and

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further since the basic concept applies equally to a system that comprises only one or a plurality of compressors.

As per claim 12, see discussion of similar claim 5, above.

As per claim 16, see discussions of claims 11 and 5, above.

Allowable Subject Matter

Claims 3, 4, 13-15, and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 8-10 are allowed.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc E. Norman whose telephone number is 703-305-2711. The examiner can normally be reached on Mon.-Fri., 8:00-5:30, with first Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Denise Esquivel can be reached on 703-308-2597. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MN



MARC NORMAN
PRIMARY EXAMINER